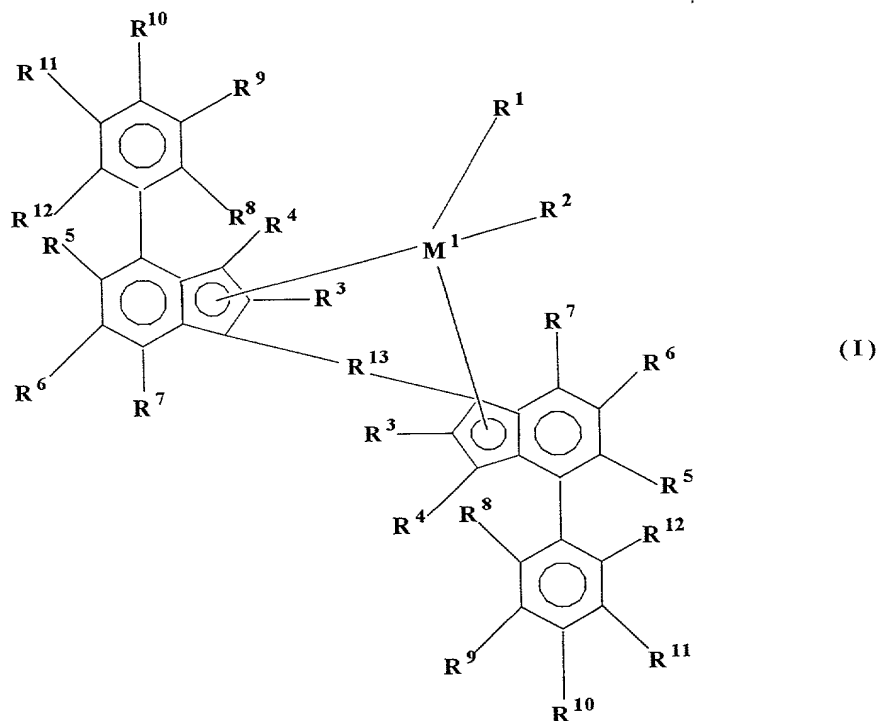


We claim:

Claim 1. A compound represented by the formula:



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wherein: M^1 is selected from the group consisting of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum and tungsten;

R^1 and R^2 are identical or different, and are one of a hydrogen atom, a C_1 - C_{10} alkyl group, a C_1 - C_{10} alkoxy group, a C_6 - C_{10} aryl group, a C_6 - C_{10} aryloxy group, a C_2 - C_{10} alkenyl group, a C_2 - C_{40} alkenyl group, a C_7 - C_{40} arylalkyl group, a C_7 - C_{40} alkylaryl group, a C_8 - C_{40} arylalkenyl group, an OH group or a halogen atom, or a conjugated diene which is optionally substituted with one or more hydrocarbyl, tri(hydrocarbyl)silyl groups or hydrocarbyl, tri(hydrocarbyl)silylhydrocarbyl groups, said diene having up to 30 atoms not counting hydrogen;

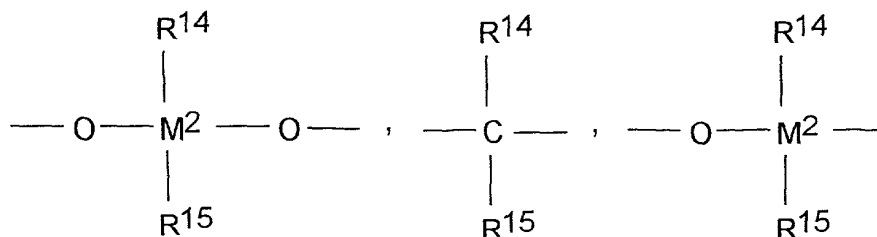
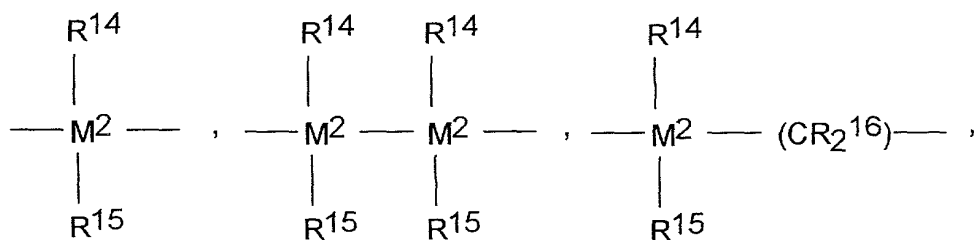
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R^3 are identical or different and are each a hydrogen atom, a halogen atom, a C_1 - C_{10} alkyl group which may be halogenated, a C_6 - C_{10} aryl group which may be halogenated, a C_2 - C_{10} alkenyl group, a C_7 - C_{40} -arylalkyl group, a C_7 - C_{40} alkylaryl group, a C_8 - C_{40} arylalkenyl group, a $-NR'^2$, $-SR'$, $-OR'$, $-OSiR'^3$ or $-PR'^2$ radical, wherein R' is one of a halogen atom, a C_1 - C_{10} alkyl group, or a C_6 - C_{10} aryl group;

R^4 to R^7 are identical or different and are hydrogen, as defined for R^3 or two or more adjacent radicals R^5 to R^7 together with the atoms connecting them form one or more rings;

10

 R^{13} is

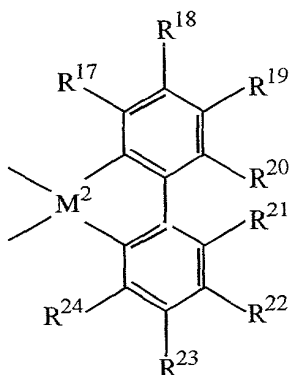
$-B(R^{14})-$, $-Al(R^{14})-$, $-Ge-$, $-Sn-$, $-O-$, $-S-$, $-SO-$, $-SO_2-$, $-N(R^{14})-$, $-CO-$, $-P(R^{14})-$, or $-P(O)(R^{14})-$, or an amidoborane radical;

15

wherein: R^{14} , R^{15} and R^{16} are identical or different and are a hydrogen atom, a halogen atom, a C_1 - C_{20} alkyl group, a C_1 - C_{20} fluoroalkyl or silaalkyl group, a C_6 - C_{30} aryl group, a C_6 - C_{30} fluoroaryl group, a C_1 - C_{20} alkoxy group, a C_2 - C_{20} alkenyl group, a C_7 - C_{40} arylalkyl group, a C_8 - C_{40} arylalkenyl group,

a C₇-C₄₀ alkylaryl group, or R¹⁴ and R¹⁵, together with the atoms binding them, form a cyclic ring;

or, R¹³ is represented by the formula:



5

wherein: R¹⁷ to R²⁴ are as defined for R¹ and R², or two or more adjacent radicals R¹⁷ to R²⁴, including R²⁰ and R²¹, together with the atoms connecting them form one or more rings;

10 M² is one or more carbons, silicon, germanium or tin;

R⁸, R¹⁰ and R¹² are identical or different and have the meanings stated for R⁴ to R⁷; and

R⁹ and R¹¹ are identical or different and are each primary, secondary or tertiary butyl groups.

15

Claim 2. The compound of claim 1 wherein R³ are identical C₁-C₄ alkyl groups.

Claim 3. The compound of claim 1 wherein R³ are identical C₃ alkyl groups.

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Claim 4. The compound of claim 1 wherein R^4 to R^7 are hydrogen atoms.

Claim 5. The compound of claim 1 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms.

5

Claim 6. The compound of claim 1 wherein R^9 and R^{11} are both tertiary butyl groups.

Claim 7. The compound of claim 1 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms and R^9 and R^{11} are both tertiary butyl groups.

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Claim 8. A catalyst composition comprising the reaction product of the compound of claim 1 and a cocatalyst.

Claim 9. The catalyst composition of claim 8 wherein the cocatalyst comprises one or more non-coordinating anion activators.

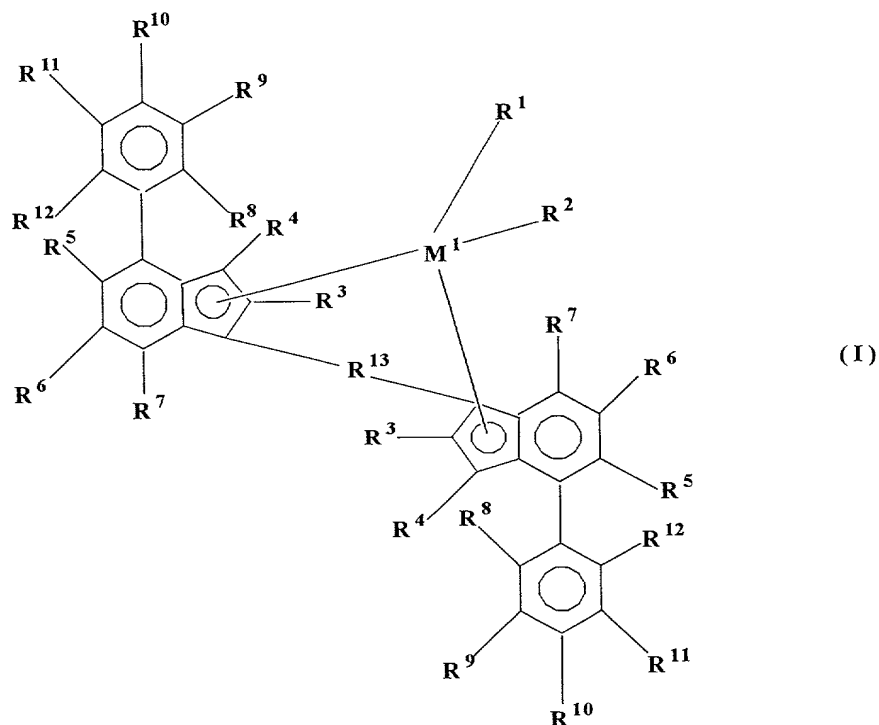
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Claim 10. The catalyst composition of claim 8 wherein the cocatalyst comprises one or more alkylalumoxane activators.

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Claim 11. The catalyst composition of claim 8 wherein the cocatalyst comprises a non-coordinating anion activator and an alkylalumoxane activator.

Claim 12. A compound represented by the formula:



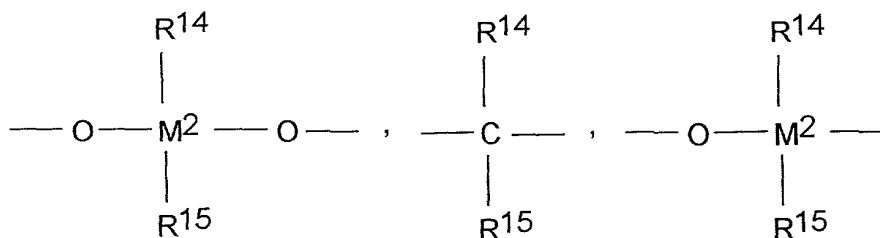
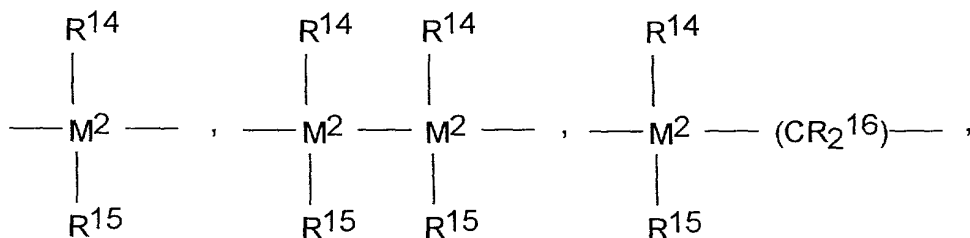
5 wherein: M^1 is selected from the group consisting of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum and tungsten;

R^1 and R^2 are identical or different, and are one of a hydrogen atom, a C_1 - C_{10} alkyl group, a C_1 - C_{10} alkoxy group, a C_6 - C_{10} aryl group, a C_6 - C_{10} aryloxy group, a C_2 - C_{10} alkenyl group, a C_2 - C_{40} alkenyl group, a C_7 - C_{40} arylalkyl group, a C_7 - C_{40} alkylaryl group, a C_8 - C_{40} arylalkenyl group, an OH group or a
 10 halogen atom, or a conjugated diene which is optionally substituted with one or more hydrocarbyl, tri(hydrocarbyl)silyl groups or hydrocarbyl, tri(hydrocarbyl)silylhydrocarbyl groups, said diene having up to 30 atoms not counting hydrogen;

15 R^3 are identical and are each a C_1 or C_2 alkyl group, a C_3 alkyl group or a C_4 - C_{10} alkyl group;

R^4 to R^7 are identical or different and are hydrogen, as defined for R^3 or two or more adjacent radicals R^5 to R^7 together with the atoms connecting them form one or more rings;

R^{13} is



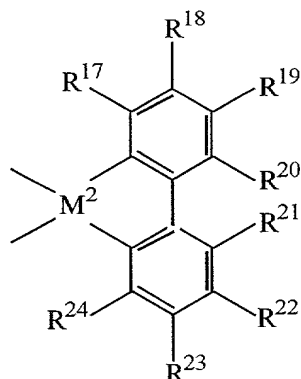
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$-B(R^{14})-$, $-Al(R^{14})-$, $-Ge-$, $-Sn-$, $-O-$, $-S-$, $-SO-$, $-SO_2-$, $-N(R^{14})-$, $-CO-$, $-P(R^{14})-$, or $-P(O)(R^{14})-$, or an amidoborane radical;

wherein: R^{14} , R^{15} and R^{16} are identical or different and are a hydrogen atom, a halogen atom, a C_1 - C_{20} alkyl group, a C_1 - C_{20} fluoroalkyl or silaalkyl group, a C_6 - C_{30} aryl group, a C_6 - C_{30} fluoroaryl group, a C_1 - C_{20} alkoxy group, a C_2 - C_{20} alkenyl group, a C_7 - C_{40} arylalkyl group, a C_8 - C_{40} arylalkenyl group, a C_7 - C_{40} alkylaryl group, or R^{14} and R^{15} , together with the atoms binding them, form a cyclic ring;

or, R^{13} is represented by the formula:

15



wherein: R^{17} to R^{24} are as defined for R^1 and R^2 , or two or more adjacent radicals R^{17} to R^{24} , including R^{20} and R^{21} , together with the atoms connecting them form one or more rings;

M^2 is one or more carbons, silicon, germanium or tin;

R^8 , R^{10} and R^{12} are identical or different and have the meanings stated for R^4 to R^7 ; and

R^9 and R^{11} are identical or different and are each primary, secondary or tertiary butyl groups.

Claim 13. The compound of claim 12 wherein R^4 to R^7 are hydrogen atoms.

Claim 14. The compound of claim 12 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms.

Claim 15. The compound of claim 12 wherein R^3 are both C_3 alkyl groups and R^9 and R^{11} are both tertiary butyl groups.

Claim 16. The compound of claim 12 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms and R^9 and R^{11} are both tertiary butyl groups.

Claim 17. A catalyst composition comprising the reaction product of the compound of claim 1 and a cocatalyst.

Claim 18. The catalyst composition of claim 17 wherein the cocatalyst
5 comprises one or more non-coordinating anion activators.

Claim 19. The catalyst composition of claim 17 wherein the cocatalyst comprises one or more alkylalumoxane activators.

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